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Proceedings of the American Society of Civil Engineers

NEWS

November, 1958

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DID YOU KNOW THAT

William S. Wise, Director of the Connecticut Water Resources Commission since 1957, has been appointed to the Federal Water Pollution Control Advisory Board. He will be one of the chief advisors to the Surgeon General of the U. S. Public Health Service in carrying out the Federal Water Pollution Control Program.

Rolf T. Skrinde has been appointed Assistant Professor of Civil Engineering, and Assistant Sanitary Engineer, Division of Industrial Research, Washington State College.

Ralph J. Van Derwerker, the first Chief Sanitary Engineer of the Coast Guard, has been reassigned by the Public Health Service to its Chicago Regional Office as Assistant Regional Engineer for General Engineering. During his five-years assignment to the Coast Guard, he developed and coordinated a service-wide sanitation program. James Le Van, Sanitary Engineer Director, has succeeded Van Derwerker as Chief Sanitary Engineer.

F. W. Montanari, staff sanitary engineer of the Ohio River Valley Water Sanitation Commission, has been elected Secretary General of the Inter-American Association of Sanitary Engineering.

Thomas R. Glenn, Jr., has been appointed Director and Chief Engineer, Interstate Sanitation Commission to succeed the late Seth G. Hess. Mr. Glenn served as Assistant Chief Engineer prior to this appointment.

SANITARY ENGINEERING EDUCATION

SANITARY ENGINEERING IN TRANSITION AT M. I. T.

If one word was required to give the current status of sanitary engineering at M. I. T., that word would be "change." There has been a change in the staff, a change in research objectives and plans are under way for a change in the curriculum. The staff changes resulted from the departure of Dr. Clair N. Sawyer, Professor of Sanitary Chemistry, who has resigned to join the staff of Metcalf and Eddy. His loss will be felt by both the staff and former students, as Dr. Sawyer was responsible for a substantial portion of the successful research activities at M. I. T. over the past ten years. Joining the staff as an Instructor is Perry L. McCarty, who will be in charge of the sanitary chemistry laboratory along with Professor James M. Symons. Dr. Symons has recently been promoted from Instructor to Assistant Professor and Dr. Ross E. McKinney from Assistant Professor to Associate Professor.

The research objectives have shifted towards more investigations into the fundamental aspects of sanitary engineering. It is the policy of the sanitary engineering division that the best solution to an applied problem can be reached only after a thorough understanding of the basic fundamentals. This approach has yielded excellent results in research on activated sludge, corrosion and radioactive waste disposal. The new fields of endeavor to be investigated this year are anaerobic digestion and total oxidation. Unfortunately, research will be limited this next year as a result of the recession. The lack of financial support is going to cause a definite curtailment of research activities.

The final change contemplated is in the curriculum. Increasing emphasis will be given to fundamental sanitary engineering principles. The students will not be taught that conventional activated sludge systems have a 6-8 hour aeration period. Instead, they will be taught what happens in the activated sludge aeration tank and the reasons why, so that they can arrive at the retention period required by the microorganisms to produce the desired results. The program will be directed towards general sanitary engineering, covering public health, chemistry, microbiology, water and waste treatment, air pollution, radioactivity and refuse disposal. This approach will produce graduates particularly well prepared for industrial waste treatment and disposal. In view of the increasing importance of industrial wastes problems and the need for new approaches to the treatment of these wastes, it is believed that the program will be quite successful.

UNIVERSITY OF CINCINNATI OFFERS NEW PROGRAM IN SANITARY ENGINEERING

The University of Cincinnati has a new undergraduate program in sanitary engineering planned to strengthen the student's background in chemistry, chemical engineering, biology and sanitary engineering at the undergraduate level. The course work will be divided about equally between civil and chemical engineering. Regular courses from both curricula will be supplemented by specialized courses in sanitary engineering. All engineering students at the University must alternate between school and work for a

three and one-half year period between freshman and senior years. Sanitary engineering students will be afforded the opportunity of work with the Robert A. Taft Sanitary Engineering Center, the Ohio River Valley Water Sanitation Commission and similar organizations in the Cincinnati area.

PROFESSIONAL TRAINING AT THE ROBERT A. TAFT SANITARY ENGINEERING CENTER

During the next three months ten training courses will be given to the R. A. Taft Sanitary Engineering Center.

December 1-12, 1958

Chemical Analyses for Water Quality

December 1-12, 1958

Sanitary Engineering Aspects of Nuclear Energy

January 12-16, 1959

Chemical Microscopy for Analysis of Air Pollutants

January 12-23, 1959

Basic Radiological Health

January 26-30, 1959

Sanitary Bacteriology of Water

January 26-30, 1959

Radioactive Pollutants in Air

February 2-6, 1959

Microbiological and Chemical Examination of Milk and Dairy Products

February 9-13, 1959

Laboratory Methods for Prevention and Control of Food-Borne Disease

February 9-20, 1959

Community Air Pollution

February 16-20, 1959

Radioactive Pollutants in Water

These courses are intended for engineers and scientists actively engaged in the field of sanitary engineering who desire to obtain the latest techniques and newest developments in their areas of particular interest. Fundamental information normally acquired at the undergraduate level is not usually included in the courses. A few broad, general courses are offered for those who have technical administrative positions and wish to acquire an over-all perspective in specific areas of sanitary engineering.

Admission is by formal written application. Applications and specific information pertaining to the various courses may be obtained from the R. A. Taft Sanitary Engineering Center, 4676 Columbia Parkway, Cincinnati 26, Ohio.

SANITARY ENGINEERING RESEARCH

SANITARY ENGINEERING RESEARCH AT THE UNIVERSITY OF PITTSBURGH

Under a grant from the Pennsylvania Department of Health, the Sanitary Engineering Laboratory of the Graduate School of Public Health, University

of Pittsburgh, has been engaged for several years in continuous and progressive studies of various technical phases of water pollution control.

Studies are being carried on there, under State Health Department auspices, involving existing industrial waste and sewage treatment plants. It is the purpose of these studies to obtain information regarding efficiency of plant operation and design, amount and character of wastes discharged, and their effects on the receiving stream.

Other studies being conducted by the School are directed toward design standards and operation of trickling filters, sewage sludge dewatering, and the fields of radioactivity and microconstituents in drinking water. State financial assistance has been made available to aid studies being conducted into ecological factors in the Ohio River in relation to existing levels of radioactivity in the river.

RESEARCH GRANTS IN SANITARY ENGINEERING AND OCCUPATIONAL HEALTH

The Public Health Service awarded 164 research grants in the fields of Sanitary Engineering and Occupational Health amounting to \$2.2 million in fiscal 1958. There were 82 grants for studies in water supply and water pollution control, 52 in air pollution, 12 in milk and food, 7 in general engineering, and 11 in occupational health. In addition, a total of 117 grants amounting to \$1.8 million were approved by study section and council actions, but could not be supported because of inadequate funds.

INDUSTRIAL WASTES RESEARCH AT WESLEYAN UNIVERSITY

Under the continuing program of the New England Interstate Water Pollution Control Commission on industrial waste surveys and research, an agreement has been consummated with Wesleyan University of Middletown, Connecticut, for research work during 1958-59. The Hall Laboratory of Chemistry at the University will undertake the following research projects and preparation of reports.

1. Investigation of chemical and other possible methods of treating tannery wastes, and the effects of segregation of wastes on treatment efficiency.
2. Preparation of a report covering mainly work previously performed which will outline the effects of copper on sludge digestion and indicate a method of eliminating these effects.
3. Preparation of a report on the setting up of experimental anaerobic digestions. This will be useful to research chemists, sanitary engineers, sewage plant operators, and others who may wish to determine the effect of various industrial wastes on other substances on digestion.
4. Preparation of a report which details a method for making a rapid accurate survey of textile plants to determine the over-all pollution load expected, the major B. O. D. producers, and means of reducing pollution loads.
5. Investigation of the sources of pollution from printed-circuit plants and indication of treatment methods and desirable process changes to reduce pollution.

WATER SUPPLY AND WATER POLLUTION CONTROL

PENNSYLVANIA'S SUCCESSFUL PUBLIC AWARENESS PROGRAM FOR WATER POLLUTION CONTROL

The Sanitary Water Board (and the Division of Sanitary Engineering) of the Pennsylvania Department of Health have received more than state-wide attention because of the "public awareness" program that has been conducted to make Pennsylvanians conscious of water pollution and means to control it.

Through a program of public education, the value and necessity of safeguarding the purity of the State's rivers and tributaries for all users: domestic, industrial, commercial and recreational has been impressed on groups and individuals.

A generalized public relations program is conducted, aimed at promoting public understanding and support for what has come to be known as the Pennsylvania "Clean Streams" Program. News releases are sent to newspapers, radio and television stations throughout the State. The publication "Clean Streams" is sent quarterly to an "all-request" mailing list in this and other States. The circulation of the most recent issue was 90,000 copies.

Special articles, as well as releases and photographs, are sent to trade publications. Speaking engagements are fulfilled, and copies of four films dealing with purity of water and the work of the Board are constantly in circulation, in fulfillment of requests from clubs and organizations.

Three large display units are available for use at conventions, fairs and other public meetings. One depicts the operation of a coal desilting plant, a second display shows the model of a sewage treatment plant, and the third display emphasized the various values that follow stream clean-up.

INTERSTATE POLLUTION CONFERENCE ON THE MISSOURI RIVER

On July 24, a conference was held at Sioux City, Iowa, on interstate pollution of the Missouri River. Conferees representing the Public Health Service and the official water pollution control agencies of Kansas, Missouri, Iowa, Nebraska and South Dakota, unanimously concluded that pollution of interstate waters subject to abatement under the Federal Water Pollution Control Act is occurring in the Missouri River, caused by discharges from municipalities and industries between Gavins Point Dam, South Dakota, and Omaha, Nebraska. The conferees unanimously adopted a time schedule for the installation of remedial facilities by such municipalities and industries. Many of the communities are taking steps toward meeting this time schedule. However, Sioux City representatives stated that the city was not polluting the river, and would not proceed further with construction because it was not economically feasible. The city declined to present substantiating data.

ILLINOIS STATE CHAMBER OF COMMERCE SPONSORS SECOND STATE WATER SUPPLY CONFERENCE

General Emerson C. Itschner, Chief of Engineers, United States Army, was guest speaker at the Second Illinois Water Supply Conference held in Chicago on August 27, 1958. Speaking on the role of water resources in a growing America, General Itschner highlighted morning and afternoon sessions on water pollution control in which many of the Nation's engineering

and business leaders participated. These included:

Milton P. Adams, Executive Secretary,
Michigan Water Resources Commission

Morris M. Cohn, Editorial Director,
Wastes Engineering

Blucher A. Poole, Technical Secretary,
Indiana Stream Pollution Control Board

Clarence W. Klassen, Chief Sanitary Engineer,
Illinois State Department of Public Health

C. S. Boruff, Technical Director,
Hiram Walker and Sons

Hudson Biery, Executive Vice President,
Ohio Valley Improvement Association

L. S. Harley, Manager, Agriculture Development
Baltimore & Ohio Railroad Company

Clayton M. Hoff, Executive Vice President,
Brandywine Valley Association

The theme of the conference was developed around the fact that the water supply available to business, agricultural, municipal and other users in Illinois has been one of the basic factors responsible for the economic growth and prosperity of the state and the well-being of its citizens.

The intelligent development and protection of this invaluable asset was held to be essential to provide for constantly increasing demands on it. Pollution of the State's water resources threatens, however, to limit severely the full utilization of streams, rivers and lakes and underground water supply. Population growth, greater industrialization and complexity of new wastes are believed to make it imperative that redoubled attention be given to the problem at this time.

PROCEEDINGS OF DISSOLVED OXYGEN SEMINAR AVAILABLE

Proceedings of the seminar on oxygen relationships in streams held at the Robert A. Taft Sanitary Engineering Center on October 30 - November 1, 1957, are available upon request from the Center at 4676 Columbia Parkway, Cincinnati 26, Ohio.

Public Health Bulletin No. 146, "A Study of the Pollution and Natural Purification of the Ohio River," authored by Streeter and Phelps in 1925 has been re-issued and is also available from the Sanitary Engineering Center upon request. This publication presents the authors' original stream formulations.

REGIONAL CONFERENCE ON WATER RESOURCES HELD AT WASHINGTON STATE COLLEGE

A regional conference on Water Resources was held at the State College of Washington on November 6-7. Papers and panel discussions presented the resources, needs and conflicts in the use of water. The final session was

centered around legislative needs. Speakers included Governor Clyde of Utah, former Governor Jordan of Idaho, Professor P. H. McGauhey of the University of California, Vinton Bacon, Executive Secretary of the Northwest Pulp and Paper Association and former California State Water Pollution Control Engineer, Emil C. Jensen, Washington State Sanitary Engineer, and many others.

ACID MINE DRAINAGE RESPONSIBLE FOR FISH KILL AND SEQUEL WILD FOWL MORTALITY

Confirmation of earlier findings that acid mine drainage was the cause of the recent fish killing on the Susquehanna River was announced by the Pennsylvania Sanitary Water Board.

Trained investigators from the State Health Department, including experienced sanitary engineers from two of the State's seven health regions, spent four days in round-the-clock field surveys of the river from Lock Haven to Harrisburg following the fish kill on July 17. The more than 100 samples of water and fish that they and wardens of the Fish Commission collected were subjected to field analyses, and were later forwarded to Harrisburg central laboratories of the Department's Sanitary Engineering Division where they were run through further series of tests. Results of this study disclosed that unusually heavy rainfalls, resulting in high acid runoffs from upstream mining areas, caused the fish killing.

These findings were borne out by the independent studies conducted by the Fish Commission, the Game Commission and the State Department of Agriculture.

The mortality among wild fowl, noted along certain portions of the river following the fish killing, was a secondary result of the fish killing. Studies made by the Agriculture Department's animal industry research laboratory at Summerdale, Pa., on samples of birds forwarded by wardens of the Game Commission showed botulism from decaying fish to have been the cause of their death.

The Sanitary Water Board pointed out that whenever a situation exists of unusually heavy rainfall on mining portions of a watershed with correspondingly heavy runoff, but with light or no rainfall in other portions of the watershed, you have all the conditions necessary for a fish killing due to acid mine drainage. This has happened regularly in the past, and it will happen regularly in the future until such time as the secret of controlling acid mine drainage, now unknown, is found.

The general condition of the Susquehanna River has improved during recent years as industries and communities have worked in conjunction with the Sanitary Water Board to implement the State's "Clean Streams" program. This is proved by the improved fishing in the river, by the improved appearance of the river, and by the fact that less organic wastes now enter the stream. Even 10 years ago, a fish killing like the recent one would have been impossible for the reason that the fish at that time simply were not present in anywhere like their present numbers.

STATE AID FOR SEWAGE TREATMENT PLANTS IN PENNSYLVANIA

Dr. Charles L. Wilbar, Jr., State Secretary of Health, said on August 4,

1958, that it is not his intention at this time to recommend discontinuance of state payments to communities for costs of treatment plants already in operation or under construction.

Under Act No. 339 (1953) municipalities are eligible for annual payments of up to 2 percent of the costs of their sewage treatment plants—depending on the amount of available funds appropriated by the legislature for this purpose.

"It is felt, however, that some sort of incentive-type of financial program is desirable for those communities which have no sewage treatment plants in operation or under construction," Dr. Wilbar said. "Communities receiving these incentive grants would not be recommended to be eligible for the annual payments under Act 339."

It was this type of financial assistance program that he recommended for consideration in his statement presented to the Joint State Government Commission, Dr. Wilbar pointed out.

AIR POLLUTION

NATIONAL AIR POLLUTION CONFERENCE

A national conference on community air pollution, the first of its kind, was held in the Nation's Capital on November 18-20, 1958. The event, sponsored by the Public Health Service, was a full scale review of current knowledge about the cause and effect of community air pollution. Participating in Conference planning were: Dr. Jerry McAfee, American Petroleum Institute; George F. Basich, Council of State Governments; Dr. Allen D. Brandt, American Iron and Steel Institute; Wilber E. Smith, American Municipal Association; Dr. Oscar A. Sander, American Medical Association; Dr. H. Fraser Johnstone, American Chemical Society; Edgar F. Wolf, Edison Electric Institute, Dr. Malcolm H. Merrill, Association of State and Territorial Health Officers; Dr. Thomas F. Malone, American Meteorological Society; Seth G. Hess, Engineers, Joint Council; A. B. Pettit, Manufacturing Chemists' Association; Harry Bellman, National Coal Association; and J. Z. Holland, Interdepartmental Committee on Air Pollution.

"THE AIR OVER LOUISVILLE"

The formal presentation of "The Air Over Louisville" was made in Louisville, Ky., earlier this year. The attractively illustrated report of the two-year air pollution study can be obtained from the Chief, Community Air Pollution Program, Division of Sanitary Engineering Services, Public Health Service, Dept. H.E.W., 330 Independence Avenue, Washington, D. C.

GOVERNORS' CONFERENCE URGES ACTION ON AIR POLLUTION PROBLEM

A resolution urging the Governor and Legislature of each State to take effective action to meet the growing air pollution problem was passed at the 50th annual meeting of the Governor's Conference at Bal Harbour, Fla., in May. At their previous meeting, the Governors' Conference requested the

Council of State Governments to conduct a study of the problem of air pollution including means of control for affected areas. The Council's report summarized the problem and stressed the need for improved controls, expanded research, and greater activity by State governments and included suggestions for possible State and interstate action in this field.

NUCLEAR ENERGY

IGY'S MEASUREMENT OF RADIOACTIVITY

Plans are being completed for Public Health Service participation in a program of measuring radioactivity sponsored by the U. S. National Committee of the International Geophysical Year. Data collected from January 1- December 31, 1958, from 10 stations are to be selected from the 42 sampling stations of the Radiological Surveillance Network for submission to the USNC - IGY.

The PHS Radiological Surveillance Network, a cooperative activity with the AEC, consists of 42 field sampling stations with a central laboratory in Washington, D. C. Three field stations and the central laboratory are operated by the PHS, the remainder of the stations are operated under the supervision of the appropriate State and Territorial Health departments with operating personnel furnished by the State or cooperating local health departments

KENTUCKY ESTABLISHES ADVISORY COMMITTEE ON NUCLEAR ENERGY

An Advisory Committee on Nuclear Energy attached to the Department of Economic Development has been established in Kentucky. The functions of the Committee are to advise and coordinate atomic energy developments for the Governor. The Committee will evaluate studies, proposals, and recommendations of the several departments and agencies within the State. It will also act as an advisory and coordinating group in the State's development and regulatory activities relating to nuclear energy, including cooperation with State and Federal Governments.

RADIOLOGICAL PROTECTION AND SURVEILLANCE IN REACTOR DEVELOPMENT

Engineers of the Public Health Service's Division of Radiological Health will conduct a joint study of radiological protection and surveillance programs appropriate to the various reactors under development at the National Reactor Test Site (NRTS) at Idaho Falls, Idaho. This study will be conducted by PHS personnel in cooperation with, and under the sponsorship of, the Health and Safety Division, AEC Idaho Operations Office. The study will include: waste production, waste treatment, and net discharges for the several reactors and facilities under normal operations; field studies to determine correlations between theoretical computations of atmospheric dilution factors and actual conditions in the field; studies of the efficacy of various sampling methods and laboratory procedures for obtaining significant results at levels of radioactivity to be expected under field conditions; and a study of

the adequacy of the design of a sampling and surveillance program, taking into consideration the accident and incident potentials of the types of installations involved.

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